

STCG Subcon Subgroup Meeting Minutes

June 8, 1999

Introductions/Announcements (Fred Serier)

Fred opened the meeting and introductions were made around the room.

Arlene Tortoso announced that there will be a Carbon Tetrachloride ITRD Project Workshop on June 17-18.

Fred noted that Scott Petersen prepared a letter to the Federal Energy Technology Center (FETC) endorsing an expansion of the sonic cone penetrometer demonstration in the 200 Area. The letter was signed by Bob Rosselli and Lloyd Piper.

Review Minutes from Last Meeting (Facilitator)

The facilitator reviewed the minutes from the May 11 meeting, and no changes were requested.

SCFA Work Package Structure (Jerry White)

This topic was deferred until the next meeting since Jerry White was on travel.

Update on Short-Form TTPs (Jim Hanson/Scott Petersen)

SCFA recently sent out a directed call to the field sites and national laboratories for short-form Technical Task Proposals (TTPs) containing workscope descriptions and cost estimates. There is \$2-4 million available for the entire Complex. The User Steering Group (USG) will determine the Complex-wide priorities among the proposals that were submitted. Rich Holten is the Hanford representative on the USG. Hanford's response to the FY 2000 SCFA Call for Proposals was as follows:

<u>Rank</u>	<u>\$</u>	<u>PL1 - DNAPLS Deliniation, Removal, Or In Situ Treatment</u>
2	230K	Enhanced Site Characterization System (JG April, BHI)
8	239K	A Reactive Barrier for Carbon Tetrachloride Treatment using In Situ Redox Manipulation (JS Fruchter, PNNL)
5	400K	DNAPL Modeling and Analysis System (MJ Fayer, PNNL)
9	147K	Development Support for Upgrading the Bioremediation/Natural-Attenuation Design Tool RT3D (TP Clement, PNNL)

PL2 - Source Term Containment/Source Term Remediation

7	175K	Surface Barrier Technology - Long-Term Cover Performance (GW Gee, PNNL)
4	200K	Vadose Zone Monitoring of the Hanford Site Surface Barrier (GW Gee, PNNL)

PL3 - Metals and Radionuclides in the Vadose and Saturated Zones

1	1160K	In Situ Redox Manipulation (MA Buckmaster, BHI)
	370K	JCCM Contaminant Transport Studies (MG Foley, PNNL)
6	583K	In Situ Chemical Treatment of Soils by Gaseous Reduction (EC Thornton, PNNL)
10	320K	SR-90 Removal From Vadose Zone By Willow Trees:100-N Riverbank Remediation (CC Ainsworth, PNNL)
3	425K	Hydrologic Characterization of the Hanford Vadose Zone at Representative Sites (GW/VZ Integration Project) (AL Ward, PNNL)

PL4 - SCFA Program Management and All Other

175K	WAG on Vadose Zone (TL Stewart, PNNL)
100K	Lead Lab Technical Support-PNNL (WJ Martin, PNNL)

Craig Cameron presented comments from Dennis Faulk (EPA) on TTP #5. It should be tied into the five-year review, and the regulators should be included in the project reviews.

Fred Serier asked how the Site could get more lead time on such calls for proposals. We only had a week to develop the short-form TTPs, which did not allow time for Subgroup review. The problem is that EM-50 always gets their funding late, after all the user programs get funded. The long-form TTPs will be due in August. Scott Petersen will develop a schedule for the TTP review process at Hanford.

Jim Hanson mentioned that EM is now operating under the "Focus Area Centered Approach", which provides "one-stop shopping" for the users. Everything is under SCFA now (e.g., ASTD, CMST, EMSP).

Arlene Tortoso stated that Rich Holten wants to know if anyone has any issues with the TTP rankings shown in the table. Scott Petersen mentioned that the H2S technology proposal moved from #3 to #6, and that is an issue. He also suggested deep access technologies for carbon tetrachloride (e.g., horizontal drilling) as an additional proposal topic.

New and Revised TTPs (Scott Petersen)

Scott noted that there are no new or revised Technology Insertion Points (TIPs) this year, just the

six existing TIPs shown below. There are no new TIPs associated with the new S&T needs yet. However, the ER Program may identify some new TIPs when their baseline is revised in the December time frame.

Technology Insertion Points

0001 - Burial Ground Remediation (100 Area)

FY01

0002 - Soils and Burial Ground Remediation (200 Area)

FY01

0003 - 300-FF-2 Remediation (300 Area)

FY06

0004 - Strontium Remediation (100-Area Groundwater)

FY08

0005 - Chromium Remediation (100-Area Groundwater)

FY03

0006 - Carbon Tetrachloride Remediation (200-Area Groundwater)

FY03

ISRM Peer Review by Region 10 (Arlene Tortoso)

Mike Thompson, Wayne Soper, and Jon Fruchter participated in the recent peer review of In Situ Redox Manipulation (ISRM) with EPA Region 10. Wayne made the presentation, and Jon discussed the technical aspects. The peer review went very well, even though it was a standing-room-only situation. The team received requests to use ISRM at other chromium sites on the west side of the state.

The results of the peer review were that Hanford should go ahead and proceed with the technology deployment. DOE will revise the proposed plan, send it to the regulators, and then send it out for a 45-day public review period by about July 1. Comments will be incorporated after the public review period has ended. The ROD amendment will be developed that will address any public comments. A DQO process is needed for the design of the Remedial Action Work Plan, specifically addressing where to place the wells.

Carbon Tetrachloride ITRD Update (Arlene Tortoso)

Arlene noted that conference calls were held on May 12 and May 19. On May 12, there were updates and more information presented on technologies discussed previously. On May 19, there

was a discussion of modeling needs and characterization. The plan is to use existing data to help with unanswered questions.

Jim Hanson stated that Mike Hightower's TTP for the ITRD Program contains the following areas of support for Hanford:

- 200-Area DNAPLs \$200K
- 100-N Area Strontium \$200K
- Interim Barrier Studies in Tank Farms \$100K

The next ITRD meeting is on June 17-18. They plan to spend a full day on characterization technologies and a half day on modeling.

Status of H2S Technology Deployment (Ed Thornton)

In Situ Gaseous Reduction (ISGR) is a promising technology for remediation of waste sites contaminated with hexavalent chromium. It is designed to treat the source term in the vadose zone. The technology reduces and immobilizes hexavalent chromium in situ by the injection of a reducing gas (diluted hydrogen sulfide). H₂S is injected in the center of the contaminated area and a vacuum is applied on the extraction wells around the perimeter to draw the H₂S and cause the reaction to occur between the chromium and the H₂S. The H₂S is oxidized to sulfate, which is a non-toxic natural constituent of soils. In the future, the technology could be used to treat uranium, technetium, and base metals at DOE sites.

A technical evaluation of a small-scale field test at White Sands Missile Range in New Mexico was completed last summer and a report was published in February 1999. The STCG Management Council recently endorsed deployment of ISGR at Hanford. Several candidate test sites (the 100-C Pluto Crib, the 100-KW Chromate Transfer Station, and the 100-DR Reactor Cooling Water Sedimentation Basin) have been identified and are currently being screened. Data gathering is ongoing to determine the best initial deployment site. The project team hopes to select the site by mid-to-late July and then move to detailed characterization to support the design of the wellfield layout.

An EM-50 Gate 4 Review and an ASME Peer Review have recently been completed on this technology. Three technical issues were identified that will be addressed during the Hanford deployment:

- What is the long-term stability of reduced chromium?
- Is the H₂S/air reaction catalyzed by soil? If so, they may need to use a H₂S/N₂ mixture for Hanford.
- Is geologic heterogeneity a problem?

A Commercialization/Deployment Plan has been prepared, and a cost analysis and preliminary cost model have been completed.

Action Items

1. Develop a schedule for the long-form TTP review process (Scott Petersen).
2. Disseminate the electronic list of existing ER Program Technology Insertion Points to the Subgroup members (Scott Petersen/Facilitator). Done.
3. Add Ed Thornton to the Subgroup distribution list (Facilitator). Done.
4. Send electronic copy of H2S presentation to Facilitator (Ed Thornton). Done.

Attendees

Craig Cameron (EPA)
Linda Fassbender (PNNL)
Jim Hanson (DOE-RL/STP)
Tina Masterson-Heggen (Ecology)
Scott Petersen (BHI/TA)
Fred Serier (DOE-RL/AME)
John Stanfill (Nez Perce Tribe)
Ed Thornton (PNNL)
Arlene Tortoso (DOE-RL/AME)

Wrap-Up (Fred Serier)

The next meeting will be held on July 13, starting at 8:30 a.m., in the Bechtel Building, Room 1B-40.